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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,500	10/31/2005	Hikaru Nishitani	92478-1900	6681
21611 7590 11/17/2008 SNELL & WILMER LLP (OC) 600 ANTON BOULEVARD SUITE 1400 COSTA MESA, CA 92626				
EXAMINER				
PERRY, ANTHONY T				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,500

Applicant(s)

NISHITANI ET AL.

Examiner

ANTHONY T. PERRY

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/27/08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-10, 13, 18-24, 29-34, 42-49, 51, 53, 55, 57, 59, 61, 63, 65 and 67-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-10, 13, 18-19, 21-24, 29-34, 42-49, 51, 53, 55, 57, 59, 61, 63, 65 and 67-68 is/are rejected.
- 7) ☐ Claim(s) 20 and 69 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The Amendment filed on 6/27/08, has been entered and acknowledged by the Examiner. Cancellation of claims 1-4, 11, 12, 14-17, 25-28, 35-41, 50, 52, 54, 56, 58, 60, 62, 64, and 68 has been entered.

New claim 69 has been added.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-10, 13, 18, 19, 21-24, 48, 61, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2001-107045) in view of Kaneda et al. (US 5,156,764).

Regarding claims 5 and 7, Suzuki discloses a plasma display panel in which a pair of substrates are disposed so as to oppose each other and have a discharge space therebetween and in which a dielectric protection layer including MgO and phosphor layers for red, green, and blue respectively are formed so as to face the discharge space, wherein each of the phosphor layers contains at least one Group IV element (for example, see Fig. 4 and paragraph 0007), but does not specifically state that a content ratio of said at least one Group IV element in each of the phosphor layers between 100 mass ppm and 5,000 mass ppm, such that all of the phosphor layers would have substantially the same content ratios.

However, Kaneda et al. teach providing phosphors with group IV elements within the claimed range in order to improve the luminance and lifetime of the phosphors (for example, see col. 3, lines 13-20). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the Group IV element in an amount between 100 mass ppm and 5000 mass ppm in order to increase the luminance and the lifetime of the phosphors.

It is elementary that mere recitation of a newly discovered function or property, intrinsically possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an intrinsic characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Since the amount of the group IV element taught by Suzuki in view of Kaneda falls within the claimed range it is considered that the functional recitation, that the amount of the group IV element causes the impedance of the dielectric protection layer to rise by a same degree over the course of time in the discharge space that corresponds to the phosphor layers red, green and blue, is met.

Regarding claim 6, Suzuki teaches a phosphor member included in at least one of the phosphor layers contains, in a composition thereof, at least one Group IV element (for example, see paragraph 0007).

Regarding claim 8, Kaneda teaches the content ratio of the Group IV element not having variations among the phosphor layers greater than 20,000 mass ppm.

Same reasoning for combination given in the rejection of claim 7, above, applies.

Regarding claim 9, Suzuki teaches each of the phosphor layers, having a phosphor member containing, in a composition thereof, at least one Group IV element is selected so as to be included in the phosphor layer (for example, see paragraph 0007).

Regarding claim 10, Suzuki teaches the at least one Group IV element contained in the composition of the phosphor member is in common with all of the phosphor layers (for example, see paragraphs 0035-0036).

Regarding claim 13, Suzuki teaches at least one Group IV element contained is a compound being distinct from any phosphor members included in the phosphor layer (for example, see paragraph 0007).

Regarding claims 18 and 21-22, Suzuki discloses a plasma display panel in which a pair of substrates are disposed so as to oppose each other and have a discharge space therebetween and in which a dielectric protection layer including MgO and phosphor layers for red, green, and blue respectively are formed so as to face the discharge space, wherein each of the phosphor layers contains at least one Group IV element (for example, see Fig. 4 and paragraph 0007), but does not specifically state that a content ratio of said at least one transition metal in each of the phosphor layers between 500 mass ppm and 30,000 mass ppm, such that all of the phosphor layers would have substantially the same content ratios.

However, Kaneda et al. teach providing phosphors with group IV elements, such as hafnium (a transition metal), within the claimed range in order to improve the luminance and lifetime of the phosphors (for example, see col. 3, lines 13-20). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the

Group IV element in an amount between 500 mass ppm and 30,000 mass ppm in order to increase the luminance and the lifetime of the phosphors.

It is elementary that mere recitation of a newly discovered function or property, intrinsically possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an intrinsic characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Since the amount of the transition metal taught by Suzuki in view of Kaneda falls within the claimed range it is considered that the functional recitation, that the amount of the group IV element (transition metal) causes the impedance of the dielectric protection layer to rise by a same degree over the course of time in the discharge space that corresponds to the phosphor layers red, green and blue, is met.

Regarding claim 19, Suzuki teaches a phosphor member included in at least one of the phosphor layers contains, in a composition thereof, at least one transition element (for example, see paragraph 0007).

Regarding claim 23, Suzuki teaches each of the phosphor layers, having a phosphor member containing, in a composition thereof, at least one Group IV element (transition metal) is selected so as to be included in the phosphor layer (for example, see paragraph 0007).

Regarding claim 24, Suzuki teaches the at least one Group IV element (transition metal) contained in the composition of the phosphor member is in common with all of the phosphor layers (for example, see paragraphs 0035-0036).

Regarding claim 48, Suzuki and Kaneda teach Si being the Group IV element (for example, see paragraph 0035-0036 of Suzuki and col. 3, lines 13-20 of Kaneda).

Regarding claims 61 and 63, Suzuki teaches the dielectric protection layer contains at least one member of the group consisting of alkali metals and alkaline earth metals (for example, see Fig. 4).

Claims 42-44, 49, 51, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2001-107045) in view of Kaneda et al. (US 5,156,764), as applied to claims 5 and 18 in view of Kim et al. (WO 01/31673).

Regarding claims 42-44, and 67, Suzuki in view of Kaneda does not specifically teach that at least part of a surface of one or more of the phosphor layers (containing at least a group IV element of no less than 1,000 mass ppm (see for example, see col. 3, lines 13-20)) facing the discharge space is covered with a phosphor protection layer, wherein the phosphor protection layer (i) having an ultraviolet ray transmittance rate of 80% or higher, and (ii) having a function of inhibiting one or more of elements included in the one or more phosphor layers that are to degrade discharge properties of the dielectric protection layer from dispersing into the discharge space.

However, Kim teaches a plasma display panel wherein all of the phosphor layers (34) are covered with a phosphor protection layer (40) (for example, see Fig. 4). Kim teaches that without this layer, phosphor particles deteriorate (for example, see page 4, lines 9-13). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to cover the surface of one or more of the phosphor layers facing the discharge space with a phosphor protection layer, the phosphor protection layer (i) having an

ultraviolet ray transmittance rate of 80% or higher, and (ii) having a function of inhibiting one or more of elements included in the one or more phosphor layers that are to degrade discharge properties of the dielectric protection layer from dispersing into the discharge space, as taught by Kim, in order to prevent the deterioration of the phosphor layers.

Regarding claims 49 and 51, Suzuki in view of Kaneda does not specifically state that the dielectric protection layer contains at least one Group IV element. However, dielectric protection layers including such an element is known in the art, as shown in Kim, which discloses a protection layer (104) that is made from MgO and one Group IV element (for example, see col. 1, lines 49-52). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used a protection layer including a group IV element, as taught by Kim, since the selection of known materials for a known purpose is within the skill of the art.

Claims 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2001-107045) in view of Kaneda et al. (US 5,156,764 in view of Kim et al. (WO 01/31673), as applied to claim 42, and further in view of Shirozu (US 2002/0050792).

Regarding claim 45, the combined invention of Suzuki, Kaneda, and Kim do not specifically teach a main component of the phosphor protection layer being MgF_2 . However, such a protection layer is known in the art, as evidenced by the Shirozu reference, which teaches display panel with a protection layer over the phosphor layer that is made from magnesium fluoride (for example, see paragraph 0087 and 0092). It has been held to be within the general

skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used a phosphor protection layer of magnesium fluoride, as taught by Shirozu, since the selection of known materials for a known purpose is within the skill of the art.

Regarding claims 46-47, the combined invention of Suzuki, Kaneda, and Kim do not specifically teach the phosphor protection layer having a lamination structure in which a first layer is formed of MgO and a second layer is formed of MgF_2 . However, such a protection layer is known in the art, as evidenced by the Shirozu reference, which teaches display panel with a protection layer over the phosphor layer that is made of a first layer, facing the discharge space, and formed of MgO and a second layer formed of MgF_2 (for example, see paragraph 0087 and 0092). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used a phosphor protection layer of magnesium fluoride, as taught by Shirozu, since the selection of known materials for a known purpose is within the skill of the art.

Claims 55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2001-107045) in view of Kaneda et al. (US 5,156,764), as applied to claims 5 and 18 in view of Hasegawa et al. (US 5,454,861).

Regarding claims 55 and 57, Suzuki in view of Kaneda does not specifically state that the dielectric protection layer contains a transition metal. Hasegawa et al. disclose a dielectric protection layer that includes a transition metal (for example, see the Abstract). It has been held

to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used a protection layer including a transition metal, as taught by Hasegawa, since the selection of known materials for a known purpose is within ordinary skill of the art.

Claims 29-34 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (US 2002/0089284) in view of Kaneda et al. (US 5,156,764).

Regarding claims 29-31 and 34, Hayashi discloses a plasma display panel in which a pair of substrates (27 and 32) are disposed so as to oppose each other and have a discharge space therebetween and in which a dielectric protection layer including MgO (28) and phosphor layers for red, green, and blue (21) respectively are formed so as to face the discharge space, wherein each of the phosphor layers contains at least one member of the group consisting of alkali metals and alkaline earth metals other than Mg (for example, see Fig. 1 and paragraph 0041).

Hayashi et al. do not specifically state that a total content ratio of said at least one member in each of the phosphor layers is within a range between 1,000 mass ppm and 60,000 mass ppm inclusive. However, Kaneda et al. teach providing phosphors with the alkaline earth element, barium, within the claimed range, such that the content ratio is substantially the same for all the phosphor layers, in order to improve the luminance and lifetime of the phosphors (for example, see col. 3, lines 13-20).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the at least one element in an amount between 1000 mass ppm

and 60000 mass ppm inclusive, in order to increase the luminance and the lifetime of the phosphors.

It is elementary that mere recitation of a newly discovered function or property, intrinsically possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an intrinsic characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Since the amount of the alkaline earth metal taught by Suzuki in view of Kaneda falls within the claimed range it is considered that the functional recitation, that the amount of the alkaline earth metal causes the impedance of the dielectric protection layer to rise by a same degree over the course of time in the discharge space that corresponds to the phosphor layers red, green and blue, is met.

Regarding claim 32, Kaneda teaches the variation between the phosphor layers with respect to a total content ratio of said at least one member being no larger than 40,000 mass ppm (for example, see col. 3, lines 13-20).

Regarding claim 33, Hayashi teaches the phosphor layers containing at least one member of the group consisting of alkali metals and alkaline metals other than Mg (for example, see paragraph 0041).

Regarding claim 65, Hayashi teaches the dielectric protection layer contains at least one member of the group consisting of alkali metals and alkaline earth metals (for example, see paragraph 0052).

Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (US 2002/0089284) in view of Kaneda et al. (US 5,156,764), as applied to claims 29 in view of Kim et al. (US 6,475,049).

Regarding claim 53, Hayashi in view of Kaneda does not specifically state that the dielectric protection layer contains at least one Group IV element. However, dielectric protection layers including such an element is known in the art, as shown in Kim, which discloses a protection layer (104) that is made from MgO and one Group IV element (for example, see col. 1, lines 49-52). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used a protection layer including a group IV element, as taught by Kim, since the selection of known materials for a known purpose is within the skill of the art.

Claims 59 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (US 2002/0089284) in view of Kaneda et al. (US 5,156,764), as applied to claim 29, in view of Hasegawa et al. (US 5,454,861).

Regarding claim 59, Hayashi in view of Kaneda does not specifically state that the dielectric protection layer contains a transition metal. Hasegawa et al. disclose a dielectric protection layer that includes a transition metal (for example, see the Abstract). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have used a

protection layer including a transition metal, as taught by Hasegawa, since the selection of known materials for a known purpose is within ordinary skill of the art.

Claims 68 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (US 2002/0089284) in view of Kaneda et al. (US 5,156,764), as applied to claim 29, in view of Kim et al. (WO 01/31673).

Regarding claim 68, Hayashi in view of Kaneda does not specifically teach that at least part of a surface of one or more of the phosphor layers facing the discharge space is covered with a phosphor protection layer, wherein the phosphor protection layer (i) having an ultraviolet ray transmittance rate of 80% or higher, and (ii) having a function of inhibiting one or more of elements included in the one or more phosphor layers that are to degrade discharge properties of the dielectric protection layer from dispersing into the discharge space.

However, Kim teaches a plasma display panel wherein all of the phosphor layers (34) are covered with a phosphor protection layer (40) (for example, see Fig. 4). Kim teaches that without this layer, phosphor particles deteriorate (for example, see page 4, lines 9-13). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to cover the surface of one or more of the phosphor layers facing the discharge space with a phosphor protection layer, the phosphor protection layer (i) having an ultraviolet ray transmittance rate of 80% or higher, and (ii) having a function of inhibiting one or more of elements included in the one or more phosphor layers that are to degrade discharge properties of the dielectric protection layer from dispersing into the discharge space, as taught by Kim, in order to prevent the deterioration of the phosphor layers.

Allowable Subject Matter

Claims 20 and 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- Wherein the transition metal is selected from the group of W, Mn, Fe, Co, and Ni and is within the range claimed in independent claim 18, in combination with the remaining claimed limitations as called for in claim 20.
- Wherein the transition metal is selected from the group of W, Mn, Fe, Co, and Ni and is within the range claimed in independent claim 21, in combination with the remaining claimed limitations as called for in claim 69.

Response to Arguments

Applicant's arguments with respect to the independent claims have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the combination of references do not teach the amounts of the elements being included for the same reasons as those claimed by the Applicant, it is noted that the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.

Regarding the Applicant's argument that the claim limitation of the content ratio of the elements within each of the phosphor layers being "substantially the same" not being met, the examiner respectfully disagrees. The prior art references disclose relatively small ranges and

therefor it is considered that each phosphor will contain "substantially the same" content ratio of the individual elements.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is (571) 272-2459. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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